Merge Sort

Merge sort is a very efficient comparison-based sorting algorithm. It is a divide-and-conquer algorithm, which works by repeatedly dividing the array in small parts and merging them again in the sorted order.

**Steps**

1. Divide the unsorted list into *n* sub-lists, each containing 1 element.
2. Repeatedly merge the sub-lists to produce new sorted sub-lists until only 1 sub-list remains. This will be the final sorted list.Code for merge sort

Text

Description automatically generated with medium confidence

**CODE FOR MERGE SORTING**

#include<stdlib.h>

#include<stdio.h>

// Merge Function

void merge(int arr[], int l, int m, int r)

{

int i, j, k;

int n1 = m - l + 1;

int n2 = r - m;

int L[n1], R[n2];

for (i = 0; i < n1; i++)

L[i] = arr[l + i];

for (j = 0; j < n2; j++)

R[j] = arr[m + 1+ j];

i = 0;

j = 0;

k = l;

while (i < n1 && j < n2)

{

if (L[i] <= R[j])

{

arr[k] = L[i];

i++;

}

else

{

arr[k] = R[j];

j++;

}

k++;

}

while (i < n1)

{

arr[k] = L[i];

i++;

k++;

}

while (j < n2)

{

arr[k] = R[j];

j++;

k++;

}

}